



REMARKS

Favorable reconsideration of this application is requested in view of the above amendments and the following remarks. Claims 2-5, 7, 8, 10, 12, and 15-26 are pending in this application. Editorial changes have been made in claims 15, 16 and 18.

Claims 10, 12 and 16-21 have been rejected for obviousness double patenting over US 5,869,013. This rejection is rendered moot by the terminal disclaimer filed herewith. Applicants are not conceding the correctness of the rejection.

Claims 2-5, 10, 12 and 15-21 have been rejected for obviousness double patenting over US 5,985,225. This rejection is rendered moot by the terminal disclaimer filed herewith. Applicants again are not conceding the correctness of the rejection.

Claims 15, 16 and 18 have been rejected under 35 USC 112, first paragraph. Claim 18 also has been rejected as indefinite. The rejections are rendered moot by the above amendments, which adopt the editorial revisions suggested in the rejections. Applicants are not conceding the correctness of the rejections.

Claims 3, 4 and 15-17 have been rejected as anticipated by JP 5-220,403. Claims 2-5, 10 and 15-17 have been rejected as obvious over this reference. These rejections are respectfully traversed. Independent product claim 15 and independent method claim 16 require materials that have Ti and/or B substituted structures. As any 35 USC 112 issues concerning these claims have been resolved, the substitution feature should be considered in evaluating patentability over the reference. The reference, which is directed to an unsubstituted BEA, fails to disclose or suggest such substitution and therefore the rejections should be withdrawn.

Claims 3, 15 and 16 have been rejected as anticipated by Tamura. Claims 3, 15, 16 and 19-21 have been rejected as obvious over this reference. These rejections are respectfully traversed. The rejections identify the relevance of the reference as the disclosure of a ferrierite material, which has passages of the 8-ring and 10-ring size oriented in different directions. However, the rejections do NOT address the limitations in the present independent claims. Page 9, lines 2-3 of the Office Action refer to the claims as requiring "the straight channels oriented in at least one of said at least two different dimensional directions having a size in section of

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oxygen-10 ring or larger", claims 15 and 16 in fact require "a plurality of straight channels of oxygen 10-ring or larger in section, said plurality of straight channels being oriented in at least two different dimensional directions". The discussion in the Office Action requires only that the straight channels in one of two directions have a 10-ring size. The actual language of the claims requires that the straight channels in both of the two directions have a 10-ring size. Thus, the disclosure of ferrierite in the reference does not meet or suggest the limitations of independent claims 15 and 16. In addition, the rejection fails to address the Ti and/or B substitution issue discussed above. Therefore, these rejections should be withdrawn.

Claims 23-26 have been rejected as anticipated by or obvious over EP 499,087 (Kawai). This rejection is respectfully traversed. Claims 23-26 have been amended to exclude an MEL type structure. Therefore, Kawai is not relevant to the invention of these claims.

S/N 08/765,046



PATENT

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, Douglas P. Mueller (Reg. No. 30,300), at (612) 371-5237.



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Date

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	TABATA ET AL.	Examiner:	T. VANOT
Serial No.:	08/765,046	Group Art Unit:	1754
Filed:	NOVEMBER 15, 1996	Docket No.:	8279.146USWO
Title:	NITROGEN OXIDE-REDUCING CATALYST AND PROCESS FOR REDUCING NITROGEN OXIDES IN EXHAUST GAS		

Version With Markings to Show Changes Made

15. (Four times Amended) A catalyst for reducing nitrogen oxides (NO_x) with hydrocarbons in an oxygen-rich exhaust containing water vapor and sulfur oxides, comprising crystalline metallosilicate ion-exchanged with Co, said crystalline metallosilicate having a plurality of straight channels of oxygen 10-ring or larger in section, said plurality of straight channels being oriented in at least two different dimensional directions, individual members of said plurality of straight channels communicating with each other via micropores having a size of oxygen 8-ring or larger, a part of Si in the metallosilicate being substituted by Ti and/or a part of [the metal] aluminum in the metallosilicate being substituted by B.

16. (Four times amended) A process for reducing NO_x in exhaust gas, which contains hydrocarbons, excess oxygen and sulfur oxides, by hydrocarbons having two or more carbons, comprising the step of: contacting the exhaust gas with a catalyst which contains at least crystalline metallosilicate ion-exchanged with Co, said crystalline metallosilicate having a plurality of straight channels of oxygen 10-ring or larger in section, said plurality of straight channels being oriented in at least two different dimensional directions, individual members of said plurality of straight channels communicating with each other via micropores having a size of oxygen 8-ring or larger, a part of Si in the metallosilicate being substituted by Ti and/or a part of [the metal] aluminum in the metallosilicate being substituted by B.

18. (Three times amended) A process for reducing NO_x by hydrocarbons in exhaust gas containing hydrocarbons and excess oxygen, in which 50% or more of hydrocarbons [calculated in terms of methane] in the exhaust gas are methane, comprising: contacting the exhaust gas with a catalyst that at least contains BEA structure aluminosilicate, a part of Si in the aluminosilicate being substituted by Ti and/or a part of [the metal] aluminum in the aluminosilicate being substituted by B, with an SiO₂/Al₂O₃ ratio between 10 and 100 and with an SiO₂/B₂O₃ ratio before ion exchange between 20 and 500, and is ion-exchanged with Co to have a Co/Al ratio between 0.2 and 0.6.

23. (Amended) A catalyst for reducing nitrogen oxides (NO_x) with hydrocarbons in an oxygen-rich exhaust containing water vapor and sulfur oxides, comprising crystalline metallosilicate having a structure other than a beta structure or a MEL structure, said metallosilicate being ion-exchanged with Co, said crystalline metallosilicate having a plurality of straight channels of oxygen 10-ring or larger in section, said plurality of straight channels being oriented in at least two different dimensional directions, individual members of said plurality of straight channels communicating with each other via micropores having a size of oxygen 8-ring or larger.

24. (Amended) A process for reducing NO_x in exhaust gas, which contains hydrocarbons, excess oxygen and sulfur oxides, by hydrocarbons having two or more carbons, comprising the step of: contacting the exhaust gas with a catalyst which contains at least crystalline metallosilicate having a structure other than a beta structure or a MEL structure and being ion-exchanged with Co, said crystalline metallosilicate having a plurality of straight channels of oxygen 10-ring or larger in section, said plurality of straight channels being oriented in at least two different dimensional directions, individual members of said plurality of straight channels communicating with each other via micropores having a size of oxygen 8-ring or larger.

25. (Amended) The catalyst according to Claim 23, wherein the structure of the metallosilicate is BOG type [or MEL type].

26. (Amended) The process according to Claim 24, wherein the structure of the metallosilicate is BOG type [or MEL type].